



REMARKS

The rejections found in paragraphs 4, 6, 8 and 10 of said Office Action are deemed moot in light of the foregoing amendments.

The rejection of Claims 20 and 26 as allegedly being anticipated by Morita under 35 U.S.C. § 102(b), of Claims 21 and 27 as being unpatentable over Morita in view of Togai et al under 35 U.S.C. § 103(a) and of Claims 22, 23, 28, and 29 as being unpatentable over Chakraborty et al in view Togai et al also under 35 U.S.C. § 103(a) are traversed. Reconsideration of these rejections on the following grounds, namely that the Morita reference neither anticipates nor suggests the claimed invention, and that the hypothetical combination of the Togai et al reference with the Morita reference or the Chakraborty et al reference are based upon impermissible hindsight. In any event, however, the latter do not set forth a *prima facie* case of obviousness based upon substantial record evidence.

In the claimed invention as set forth in Claims 20, 22, 26 and 28, in particular, a vehicle is operated selectively in a first running mode or a second running mode. The first running mode is a normal drive mode in which a vehicle is controlled in accordance with the depression of the accelerator pedal operated by a vehicle driver. The second mode is an automatic drive mode, i.e., cruise control (a constant vehicle speed control), or a constant headway distance control. The first target value of the first running mode is determined on the basis of a depressed accelerator pedal stroke. The second target value of the

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second running mode is determined from environmental operating conditions ahead of the running vehicle.

During a transient state of the vehicle when the first running mode, (i.e., normal drive mode) is commanded to be changed to the second running mode (i.e., automatic drive mode), the vehicle or engine is controlled according to the third target value (T_{tar}) different from the first and second target values so as to avoid a heavy shock of the vehicle due to a sharp change of the target value. The third target value is gradually varied from the first target value to the second target value during a transient period T_s as best shown in Fig. 3. In Claims 20, 21, 26 and 27, the driving shaft torque of the vehicle is controlled according to the first, second or third target value. In Claims 21, 23, 28 and 29, the engine torque of the vehicle is controlled according to the first, second or third target value.

The Morita patent discloses an automatic cruise control system. In that system, if a target vehicle speed for the automatic cruise control mode is commanded to be increased when the vehicle is running in the automatic cruise control mode with a first throttle opening, the throttle is set to the second throttle opening during the transient state so as to control sharp change of the vehicle speed. At the end of the transient state and the vehicle speed achieves the target vehicle speed, the throttle is returned to the first throttle opening from the second throttle opening. That is, the Morita patent merely teaches that the target speed change occurs in the same running mode (i.e., automatic cruise control mode). It does not address the problem which occurs in a transient state between different control modes, i.e., abrupt torque change in the transient state

between different running modes such as a normal running mode and a cruise control mode. Nor, does it suggest avoiding the torque change by setting the third target value.

The Chakraborty et al patent likewise does not teach or suggest setting the third target value so that the driving torque or engine torque is controlled according to the third target value which varies from the first target value to the second target value in the transient state (Ts) from the first running mode to the second running mode.

The Togai et al. patent teaches only a vehicle speed control which a torque target value is determined based on a difference between a target feedback speed and a detected actual vehicle speed. A feedback control for the target torque is provided using various correction factors (e.g., variable gain of PI-control and limiter for parameters). The Togai et al. patent does not address the problem which occurs in a transient state between different control modes, namely abrupt torque change in the transient state between different running modes such as a normal running mode and a cruise control mode. Nor, does it suggest avoiding the torque change even by setting the third target value. Indeed, the Togai et al. patent does not teach setting the third target value so that the driving torque or engine torque is controlled according to the third target value which varies from the first target value to the second target value in the transient state (Ts) from the first running mode to the second running mode.

For the foregoing reasons, the rejections based on 35 U.S.C. § 102(b) and § 103(a) are not well founded. Early and favorable action on the claims remaining in the case is, thus, earnestly solicited.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response. Please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket #381AS/44307C2).

Respectfully submitted,

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